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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Re: Appeal to the Board of Patent Appeals and Interferences

In re PATENT application of
NAYLER

Group Art Unit: 2631

Application No. 10/002,185

Examiner: TORRES, Juan A.

Filed: December 5, 2001

Docket : 95-525

Title: Arrangement for Initializing Digital Equalizer Settings Based on Comparing Digital Equalizer Outputs to Prescribed Equalizer Outputs

Date: June 21, 2006

Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

1 ☐ **NOTICE OF APPEAL**: Applicant hereby appeals to the Board of Patent Appeals and Interferences from the decision (not Advisory Action) dated August 5, 2005 of the Examiner twice/finally rejecting claims

2 ☐ **BRIEF** on appeal in this application attached.

3 ☐ An **ORAL HEARING** is respectfully requested under Rule 194 (due two months after Examiner's Answer unextendable).

4 ☒ Reply Brief is attached (due two months after Examiner's Answer -- unextendable).

5. **FEE CALCULATION**:		Large/Small Entity	
If box 1 above is X'd, see box 12 below first and decide: . . . . . enter		$500/250*	$
If box 2 above is X'd, see box 12 below first and decide: . . . . . enter		$500/250*	$
If box 3 above is X'd, see box 12 below first and decide: . . . . . enter		$1000/500*	$
If box 4 above is X'd, ... enter nothing		- 0 - (no fee)	
6. Original due date: June 27, 2006			
7. **Petition is hereby made** to extend the original due date to cover the date this response is filed for which the requisite fee is attached	(1 mo) $120 (2mos) $450 (3mos) $1020 (4mos) $1590	+ $	
8. Enter any previous extension fee paid [ ] previously since above original due date (item 6); [ ] with concurrently filed amendment		-	
9. **Subtract line8 from line7 and enter: Total Extension Fee**			+$
10. **TOTAL FEE ATTACHED =**			**$ 0**

11. ☐ *Fee NOT required if/since paid in prior appeal in which the Board of Patent Appeals and Interferences did not render a decision on the merits.

CHARGE STATEMENT: The Commissioner is hereby authorized to charge any fee specifically authorized hereafter, or any missing or insufficient fee(s) filed, or asserted to be filed, or which should have been filed herewith or concerning any paper filed hereafter, and which may be required under Rules 16-18 (missing or insufficient fee only) now or hereafter relative to this application and the resulting Official document under Rule 20, or credit any overpayment, to our Account/Order No. 50-0687 / 95-525 for which purpose a duplicate copy of this sheet is attached. **This CHARGE STATEMENT does not authorize charge of the issue fee until/unless an issue fee transmittal form is filed**

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Docket No.: 95-525 PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of	:	
NAYLER	:	
Serial No.: 10/002,185	:	Group Art Unit: 2631
Filed: December 5, 2001	:	Examiner: TORRES, Juan A.

For: ARRANGEMENT FOR INITIALIZING DIGITAL EQUALIZER SETTINGS BASED ON COMPARING DIGITAL EQUALIZER OUTPUTS TO PRESCRIBED EQUALIZER OUTPUTS

MAIL STOP: APPEAL BRIEF – PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REPLY BRIEF

Sir:

In response to the Examiner's Answer mailed April 27, 2006, Appellant submits this Reply Brief within two months as required under 37 C.F.R. §41.41.

The Grounds of Rejection

Appellant notes that the Grounds of Rejection (sec. 9) on page 2 *et seq.* of the Examiner's answer is essentially a copy of the prior rejection in the August 5, 2005 Final Rejection, except for the following two changes:

1) The Examiner's citation of col. 7, lines 28-41 of U.S. Patent No. 6,097,787 to Lo as opposed to the prior citation of col. 7, lines 30-31 (see, e.g., page 3 of the Examiner's Answer); and

2) An assertion that "The threshold will be the setting that causes the minimum amount of

jitter in the phase locked loop. The setting that is above, or equal to this threshold is selected, because this setting provides the best performance of the equalizer." (See, e.g., page 3 of the Examiner's Answer).

These two new issues are addressed below regarding the "Response to Argument". The grounds of rejection which were copied from the August 5, 2005 Final Rejection have already been addressed in the February 7, 2006 Appeal Brief.

The Response to Argument

As demonstrated in detail below, the Response to Argument portion of the Examiner's Answer (sec. 10, page 8 *et seq.*) fails to rebut Appellant's arguments because it fails to address the substance of Appellant's arguments. Rather, the Response to Argument evades the substance of Appellant's arguments by ***ignoring essential claim limitations***, parroting the language of the reference, and by presenting arguments based solely on speculation and conjecture. Moreover, the Response to Arguments demonstrates a piecemeal application of the reference in a manner that ignores the claims as a whole.[1]

Regarding claims 1 and 6

A1. **Lo et al. Does Not Disclose or Suggest the Claimed Selectively Changing the Equalizer Settings Until the Equalized Signal Samples Reach the Prescribed Equalization Threshold**

The Response to Arguments fails to dispute that the Examiner has the burden of

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[1] "Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim." *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984); *In re Bond*, 15 USPQ2d 1566, 1567 (Fed. Cir. 1990) (citing *Lindemann Maschinenfabrik GmbH*). "Anticipation cannot be predicated on teachings in the reference which are vague or based on conjecture." *Studiengesellschaft Kohle mbH v. Dart Industries, Inc.*, 549 F. Supp. 716, 216 USPQ 381 (D. Del. 1982), *aff'd.*, 726 F.2d 724, 220 USPQ 841 (Fed. Cir. 1984).

establishing not only that Lo et al. discloses a digital feedforward equalizer, as claimed, but also that any digital feedforward equalizer disclosed in Lo et al. also is supplied equalizer settings ***in the same manner as claimed.*** Hence, the Examiner has the burden of establishing that Lo et al. discloses each and every element of the claim such that the identical invention must be shown in as complete detail as is contained in the claim.[2] Hence, the reference also must disclose each of the elements arranged as in the claims under review.

The Response to Arguments repeatedly states that:

> Lo discloses an apparatus and method for determining an optimum equalizer setting for a signal equalizer in a communication network receiver (title of the patent); and *an optimum equalizer setting is determined for a signal equalizer in a network receiver* ***by successively setting the equalizer to different predetermined settings*** (abstract).

(See, e.g., pages 8, 11, 12, 13, 14 of Examiner's Answer).

As described in further detail below, the Response to Arguments ignores the essential claim limitation "supplying a prescribed initial set of equalizer settings to a ***digital feedforward equalizer***" in combination with "***selectively*** changing the *supplied* equalizer settings ... ***until*** the equalized signal samples reach the ***prescribed equalization threshold***."

The Response to Arguments also fails to present any evidence (let alone *arguments*) that the claimed "***selectively*** changing" should be so broadly construed as to encompass the disclosed "***successively*** changing".

In fact, the claimed "selectively changing" and the disclosed "successively changing" have opposite meanings: the claimed "***selectively*** changing" refers to *conditionally* changing the supplied equalizer settings (based on the claimed "*until* the equalized signal samples reach the prescribed equalization threshold"); in contrast, the disclosed "***successively*** changing" refers to

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[2]As specified in MPEP §2131: "'A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference' *Verdegaal Bros. V. Union Oil Co. of California,* 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). ... 'The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)." MPEP 2131 (Rev. 3, Aug. 2005, at p. 2100-76).

consistently changing the equalizer settings to ensure normalized result is obtained for each of the predetermined equalizer settings.

Hence, there is no rational basis for construing the claimed "selectively changing" as broadly as to encompass the disclosed "successively changing": the deliberate disregard of the claimed "***selectively*** changing" is reversible error because "[a]ll words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

The reliance on the Abstract also is misplaced. The Abstract states, in part:

> An optimum equalizer setting is determined for a signal equalizer in a network receiver by successively setting the equalizer to different predetermined settings, detecting timing correlation results between the equalized signal and a recovered clock in a digital phase locked loop, and ***determining a normalized distribution result for each of the predetermined equalizer settings*** based on the timing correlation results. The equalizer setting having the minimum normalized distribution result ***can then be selected as the optimum equalizer setting***.

In other words, the Abstract (as well as col. 7, lines 28-41 and other portions of Lo) consistently teaches supplying all the equalizer settings to the equalizer, and then selecting the one equalizer setting that has the minimum normalized distribution result. Lo simply does not disclose or suggest the claimed ***selectively*** changing the equalizer settings supplied to the digital feedforward equalizer because Lo requires that all equalizer settings be applied unconditionally to determine the optimum equalizer setting.

Further, the Response to Arguments ignores the essential claim limitation of "***until*** the equalized signal samples reach the prescribed equalization threshold." Rather, the Response to Arguments simply states that "Lo discloses that an optimum equalizer setting is determined for a signal network receiver by successively setting the equalizer to different predetermined settings." As apparent from the Abstract of Lo, however, each and every equalizer setting must be supplied in order to determine the optimum equalizer setting.

A1(i) Lo et al.'s Prior Art Receiver Does Not Disclose the Claimed Selectively Changing

Appellant notes that the Response to Arguments does not address Appellant's arguments regarding the prior art equalizer 16 of Fig. 1 described in Lo et al. (which is an *open loop system*): the Response to Arguments simply repeats the language of Lo describing "successively setting the equalizer to different predetermined settings (abstract)", followed by quoting the Abstract. Hence, the Response to Arguments fails to address Appellant's arguments regarding the open loop system of Lo et al. as described in Fig. 1 and col. 1, line 6 to col. 2, line 23.

Hence, the Response to Arguments fails to establish that the disclosed "successively setting the equalizer to different predetermined settings" (which is disclosed in Lo as applied to the *closed loop system*) could be applied in the *open loop system* of Fig. 1 and col. 1, line 6 to col. 2, line 23.

A1(ii) Lo et al.'s Equalizer 32 and Equalizer Controller 32 Do Not Disclose the Claimed Selectively Changing

In addition to the foregoing, the Response to Arguments fails to address or dispute Appellant's arguments that:

1) Lo et al. discloses in Figs. 2 and 3 a "closed loop system"[3], where each and every equalizer setting is evaluated to determine the equalizer setting creating the minimum jitter in the PLL 34; hence, the disclosed "closed loop system" of Figs. 2 and 3 that rely on a "phase locked loop" cannot be considered a disclosure of the claimed "digital feedforward equalizer";

2) independent claims 1 and 6 explicitly require that, once the equalized signal samples reach the ***prescribed equalization threshold***, the supplied equalizer settings are ***no longer changed***; or

3) Lo et al. cannot disclose the claimed "selectively changing the supplied equalizer settings until the equalized signal samples reach the prescribed equalization threshold" because

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[3]The term "closed loop" is described in the Abstract at lines 10-13; col. 2, lines 30-34, and col. 3, lines 16-24).

Lo et al. requires that each and every equalizer setting be provided to the equalizer 32 to determine the **optimum equalizer setting providing the minimum jitter**.

Hence, Lo provides no disclosure or suggestion of the claimed digital *feedforward* equalizer that receives the supplied equalizer settings in combination with "***selectively*** changing the supplied equalizer settings ... ***until*** the equalized signal samples reach the ***prescribed equalization threshold***.", and any assertions by the Examiner to the contrary are insufficient to overcome the deficiencies in the applied reference. "A prior art patent is a reference only for that which it teaches." *Corning Glass v. Sumitomo Electric*, 9 USPQ2d 1962, 1970 (Fed. Cir. 1989).

A1(iii) The Rejection Fails to Identify the Claimed Selectively Changing

As argued above, the deliberate disregard of the claimed "***selectively*** changing" is reversible error because "[a]ll words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

A2. Lo et al. Does Not Disclose or Suggest the Claimed Equalization Threshold

The Examiner does not dispute Appellant's argument that the "sig_det" is not a teaching of the "prescribed equalization threshold"; hence, the Examiner apparently concedes that column 6, lines 1-4 is no longer considered a teaching the claimed "prescribed equalization threshold".

The Response to Arguments raises the new issue regarding the claimed "prescribed equalization threshold", namely that "[t]he threshold will be the setting that causes the *minimum amount of jitter* in ***the phase locked loop***. The setting that is above, or equal to this threshold ***is selected***, because this setting provides the best performance of the equalizer." This assertion that the claimed "threshold" is equivalent to the disclosed "optimum setting" is speculative and based on conjecture, because the Response to Arguments fails to cite any evidence to support this assertion.

This assertion also is not a valid argument regarding the broadest reasonable

interpretation of the claimed "prescribed equalization threshold" because it is inconsistent with the specification. The specification describes the prescribed ***equalization*** threshold as representing "stable, equalized signal samples" that are output by the ***digital feedforward equalizer*** such that the signals samples are equalized "to a ***sufficient equalized level*** to ensure that the slicer 22 can output reliable data":

> [T]he receiver controller 32 disables the feedback equalizer 26 during initialization, relying solely on the feedforward equalizer 28 and the equalizer controller 30 for initial equalization of the retrieved signal samples to a prescribed equalization threshold representing stable, equalized signal samples. Once the feedforward equalizer 28 has equalized the retrieved signal samples from the A/D converter 16 to a sufficient equalized level to ensure that the slicer 22 can output reliable data ....
>
> (Page 6, lines 6-11)

The broadest *reasonable* interpretation must be (1) consistent with the specification, and (2) consistent with the interpretation that those skilled in the art would reach.[4] Hence, the prescribed ***equalization*** threshold described in the specification requires a ***threshold*** that represents stable, equalized signal samples having been equalized *solely by the claimed digital feedforward equalizer.*

Hence, this assertion in the Response to Arguments that "[t]he threshold will be the setting that causes the minimum amount of jitter in the phase locked loop" is inconsistent with the specification because the specification describes the equalized signal samples having been equalized by the claimed ***digital feedforward equalizer*** after having disabled the feedback equalizer.

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[4]"During patent examination, the pending claims must be 'given their broadest reasonable interpretation consistent with the specification.'" MPEP §2111 at 2100-46 (Rev. 3, Aug. 2005) (*quoting In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000)).

"The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach." MPEP §2111.01 at 2100-47 (Rev. 3, Aug. 2005) (*citing In re Cortright*, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999)).

Further, this assertion in the Response to Arguments is inconsistent with the specification, and the interpretation those skilled in the art would reach, because the Examiner is suggesting a result-oriented analysis, where the ***equalizer setting*** that provides "the best performance of the equalizer" should be the threshold, whereas the specification requires no more than a ***sufficient*** equalization.

Moreover, this assertion in the Response to Arguments disregards the very teachings of Lo, where no "*prescribed* equalization threshold" is used because Lo requires that each and every equalizer setting be evaluated (by *successively setting* the equalizer settings supplied to the ***phase locked loop***) to determine the ***best*** setting. The very fact that Lo requires that each and every equalizer setting of the ***phase locked loop*** be evaluated to determine the ***best*** setting demonstrates that Lo has no prescribed equalization threshold whatsoever, especially when considered in the context of the claim as a whole, which requires ""supplying ... equalizer settings to a ***digital feedforward equalizer***" in combination with "***selectively*** changing the supplied equalizer settings, *based on the comparing step*, ***until*** the equalized signal samples reach the prescribed equalization threshold.

Even if the claimed "prescribed equalization threshold" hypothetically was interpreted as suggested, Lo *still* would not disclose the claimed "selectively changing the supplied equalizer settings ... ***until*** the samples reach the prescribed equalization threshold" because Lo does not disclose or suggest halting the change in supplied equalizer settings upon reaching the "minimum outside count" (i.e., selectively changing the supplied equalizer settings until the equalized signal samples reach "a minimum outside count"), but rather ***continues*** changing the supplied equalizer settings in order to test all the settings (see, e.g., col. 8, lines 20-27), where "settings C, D, E each have the same minimum count": if Lo disclosed the claimed "selectively changing ... until...", the third identical setting (e.g., E) would not have been tested.

Anticipation cannot be established based on a piecemeal application of the reference, where the Examiner picks and chooses isolated features of the reference in an attempt to

synthesize the claimed invention.[5] In other words, it is not sufficient that a single prior art reference discloses each element that is claimed, but the reference also must disclose that the elements are arranged as in the claims under review. *In re Bond*, 15 USPQ2d 1566, 1567 (Fed. Cir. 1990) (citing *Lindemann Maschinenfabrik GmbH*).

Since Lo et al. does not disclose each and every claim limitation, this rejection must be withdrawn, since all words must be considered. *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

For these and other reasons, the §102 rejection of independent claims 1 and 6 should be withdrawn.

B. Lo et al. Does Not Disclose the Claimed Prescribed Equalization Threshold of Claims 4-5, 9-13

The Response to Arguments fails to provide any new arguments that rebut Appellant's argument B in the Appeal Brief. Rather, the Response to Arguments literally copies the same argument as applied to argument A2 *supra.* Hence, the Response to Arguments is *per se* deficient because it fails to address the specific arguments presented, and the explicit claim limitations.

Hence, the Response to Arguments fails to address that claims 4-5 and 9-13 specify that the claimed equalization threshold is based on ***another threshold***, namely the "reference level", and represents an ***expected number of detected signal samples*** to be detected within a prescribed count interval and exceeding the reference level. Hence, not only must the equalized signal

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[5] "Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim." *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984). "Anticipation cannot be predicated on teachings in the reference which are vague or based on conjecture." *Studiengesellschaft Kohle mbH v. Dart Industries, Inc.*, 549 F. Supp. 716, 216 USPQ 381 (D. Del. 1982), *aff'd.*, 726 F.2d 724, 220 USPQ 841 (Fed. Cir. 1984).

samples exceed the reference level, but also the number of equalized signal samples that exceed the reference level must exceed the "expected number".

Hence, the Response to Arguments fails to rebut Appellant's argument that:

1) Lo provides no reference whatsoever to any "absolute value", let alone the claimed location where a statistically substantial number of the data values ***representing a symbol absolute value of "1"*** should occur for an equalized signal;

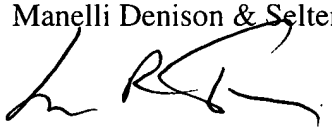
2) Lo et al. provides no disclosure or suggestion whatsoever with respect to any ***expected number of detected signal samples***.

Conclusion

For the reasons set forth above, it is clear that Appellant's claims 1-13 are patentable over the reference applied. Accordingly the appealed claims 1-13 should be deemed patentable over the applied reference. It is respectfully requested that this appeal be granted and that the Examiner's rejections be reversed.

Respectfully submitted,

Manelli Denison & Selter, PLLC



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